

**NEW FRONTIERS AO**  
**LAUNCH SERVICES INFORMATION SUMMARY**  
**December 4, 2003**

**Domestic ELV Launch Services Ground-Rules/Policy**

All domestic Expendable Launch Services proposed for this AO will be procured and managed by NASA/KSC via the NASA Launch Services (NLS) contract. Domestic launch services that are procured directly by the PI/proposed team or contributed by a partner will not be considered for this AO

NLS launch services includes the Launch Vehicle (LV), associated standard services, non-standard services (mission unique options), all engineering and analysis, and minimum performance standards. NASA launch services also provide technical management of the launch service, technical insight into the LV production/test, coordination and approval of mission-specific integration activities, mission unique LV hardware/software development, payload-processing accommodations, and the launch campaign/countdown management.

There are two service providers in the intermediate and heavy performance classes of launch services (the Delta series provided by the Boeing Company and the Atlas family of launch vehicles provided by Lockheed Martin). Proposers should seek to be dual compatible with both vehicle families. However, if a proposal team can identify compelling reason(s) not to maintain dual LV compatibility, then the proposal team may choose a single LV for proposal purposes. NASA cannot assure that both launch service capabilities will continue to be available to support launches in 2010 and beyond, hence proposal teams who elect not to maintain dual LV compatibility in their proposed investigation must realize that in the event that their investigation is selected to enter Phase A, the dual compatibility requirement may be re-imposed. Final assignment of a specific launch vehicle will occur after NASA conducts a launch service competition during Phase B. During Phase A and after the selection to proceed to the following phases, the Phase A cost cap growth rule (reference New Frontiers Program 2003 AO, Section 5.9.1) will not be applied solely to the re-imposition of the dual compatibility requirement.

All NASA-procured launch services are to be consistent with NASA Policy Directive (NPD) 8610.7, NASA Launch Services Risk Mitigation Policy. Expendable launch services acquired from NASA will be managed in accordance with NPD 8610.23, Technical Oversight of Expendable Launch Vehicle (ELV) Launch Services. These NPD's can be accessed through the URLs:

[http://nodis3.gsfc.nasa.gov/library/displayDir.cfm?Internal\\_ID=N\\_PD\\_8610\\_0007\\_&page\\_name=main](http://nodis3.gsfc.nasa.gov/library/displayDir.cfm?Internal_ID=N_PD_8610_0007_&page_name=main)

[http://nodis3.gsfc.nasa.gov/library/displayDir.cfm?Internal\\_ID=N\\_PD\\_8610\\_023A\\_&page\\_name=main](http://nodis3.gsfc.nasa.gov/library/displayDir.cfm?Internal_ID=N_PD_8610_023A_&page_name=main)

Dual manifested or secondary payloads on domestic LVs will not be considered for this AO.

**Foreign Launch Vehicles**

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Proposals that include Foreign Launch Vehicles will only be considered if the launch service is provided as a contribution and consistent with the following:

Contributed foreign launch services are permitted for payloads that do not contain nuclear power sources or nuclear materials. Non-U.S. launch services for payloads containing nuclear materials of any kind are prohibited. Proposals assuming contributed foreign launch will be evaluated on a case-by-case basis for consistency with NPD 8610.7. The proposal must clearly address the flight history of the foreign LV and mitigation plans for technical risk. These mitigation plans should be structured to meet the same intent as NPD 8610.7. Any costs associated with mitigation plans/technical insight must be identified and accounted for in the cost proposal. In addition, the proposal must address export control and technology transfer issues, consistent with NASA policy.

**Launch Vehicle Information/Configuration/Performance**

NASA/KSC Launch Services Program has developed an on-line payload planner's guide for NASA missions. This web site contains information relevant to NASA-procured launch services. The information provided includes all available NLS LV configurations, standard/non-standards services, and payload fairing envelopes and environments. This planning tool can be found at the following web address: <http://elvppg.ksc.nasa.gov>. Access to this site requires a self-determined password, which is activated by the site administrator at KSC. A user can request access/password activation by going to the site and following the directions provided on the log-in screen as well as providing the required information. Access to this web site can typically be activated within 24-48 hours during the week. For questions, contact NASA/KSC/ELV. This web site contains no information on foreign LVs.

The Offerors should select the minimum ELV configuration(s) that meets their requirements including adequate performance margins. As a reference tool, the NASA/KSC Launch Services Program has developed an on-line tool to assist in determining LV performance. This tool is publicly accessible at the following web address: <http://elvperf.ksc.nasa.gov>. The intermediate and heavy class performance information reflects figures consistent with the NLS contract requirements. All of these figures reflect separated Spacecraft mass and each have associated ground-rules/assumptions (including the adapter-type). For variations from that which is found on-line, contact NASA KSC Launch Services Office for an assessment. The Offeror should specifically state in the proposal the Expendable Launch Vehicle (ELV) configuration(s) that meet their requirements for this mission. This web site contains no information on foreign LVs.

The NLS contract does not offer a 3<sup>rd</sup> stage (kick-stage) as an option on any of the intermediate or heavy class LVs and therefore, offerors shall be responsible for providing the kick-stage if necessary.

**Nuclear Launch Approval**

For missions using nuclear materials, the NASA/KSC Launch Services Program is responsible for managing the development, coordination and technical content of the LV Databooks. The costs for the mission unique databook(s) and other LV-related items (e.g., range requirements for the LV, FTS system, event sequence diagrams, etc.) have been

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accounted for in the noted nuclear missions cost figures. These costs are only applicable for missions that are using nuclear materials on-board.

**Launch Service Costs**

For purposes of this AO, the NLS ELVs have been categorized into three Launch Services classes; medium, intermediate, and heavy. Table 1 provides launch service cost figures for each of the given launch service classes. Based on the Offeror's selection of the individual ELV configuration(s) that meet their technical requirements, the Offeror should use the respective launch service class dollar figures in the overall mission cost. Cost risk within each launch service Class should be considered constant for purposes of this AO (i.e. Offerors should not attempt to distinguish differences in cost between Delta and Atlas within a respective class).

Funding estimates are stated in real-year dollars and assume a launch in **June 2009**. For cost estimates for launches in years other than 2009, please contact NASA/KSC/ELV for a different estimate. The funding profiles provide for the launch service, nominal allocation for mission unique launch vehicle modifications/services, mission integration, launch site payload processing, and the LV-related tasks for the nuclear launch approval process. The estimated costs for nuclear launch approval covered in these figures include items such as LV data-books, launch site accommodations for nuclear materials, material handling/logistics by DOE, and Range Safety requirements associated with the LV. For the intermediate and heavy-classes LVs only, these cost figures do not include the cost for development/procurement of a 3<sup>rd</sup>-stage (kick-stage), if required.

**Evaluation Criteria**

Attachment 1 shows the Evaluation checklist that will be used as a guide for the evaluators during the proposal evaluation phase. This checklist should give the offerors an indication of the types of information expected in the proposals regarding the launch service.

**NASA ELV Launch Services Point of Contact for Additional Information**

Additional information including, but not limited to, availability of smaller or larger launch vehicles, performance quotes, mission integration inquiries and costs may be obtained from:

**Norman M. Beck, Jr**  
**Advanced Planning Manager**  
**NASA Launch Services Program**  
**Code VA-A**  
**Kennedy Space Center, FL 32899**

**Phone: 321-476-36 17**

**Email: [Norman.M.Beck@nasa.gov](mailto:Norman.M.Beck@nasa.gov)**

TABLE 1

**Launch Services Cost Figures**

**Medium Launch Service Class-Non-Nuclear**

	<b>FY06</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09</b>	<b>Total</b>
<b>Delta II 7925</b>	<b>\$1M</b>	<b>\$32M</b>	<b>\$27M</b>	<b>\$18M</b>	<b>\$78M</b>
<b>Delta II 7925H</b>	<b>\$1M</b>	<b>\$36M</b>	<b>\$31M</b>	<b>\$20M</b>	<b>\$88M</b>

**Intermediate Launch Service Class-Non-Nuclear**

Delta IV 4040, 4240 and 4450

Atlas V 401, 501, 511, 521, 531, 541, 551, and Atlas V xx2 configurations as applicable

<b>FY06</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09</b>	<b>Total</b>
<b>\$2M</b>	<b>\$57M</b>	<b>\$50M</b>	<b>\$31M</b>	<b>\$140M</b>

**Heavy Launch Service Class-Non-Nuclear**

Delta IV Heavy and Atlas V Heavy

<b>FY06</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09</b>	<b>Total</b>
<b>\$2M</b>	<b>\$96M</b>	<b>\$82M</b>	<b>\$52M</b>	<b>\$232M</b>

NOTE:

- All costs are estimated in real-year dollars (order year = L-30m) based on current NLS contracts information.
- Assumes June 2009 launch date from CCAFS
- The funding profiles provide for the launch service, nominal allocation for mission unique launch vehicle modifications/services, mission integration, launch site payload processing, range safety, and telemetry and communications.
- These cost figures include the 3<sup>rd</sup> stage (kick-stage) for medium class LV's only. Intermediate and heavy class vehicles do not include the cost for the 3<sup>rd</sup> stage (kick-stage).

**Nuclear Missions-Additional Launch Costs to Basic Launch Service**

The estimated additional launch costs for Nuclear Launch Approval for the launch vehicle covered in these figures include items such as LV Databooks, Launch site accommodations for nuclear materials, material handling/logistics by DOE, and Range Safety requirements associated with the LV.

<b>FY06</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09</b>	<b>Total</b>
<b>\$2M</b>	<b>\$4M</b>	<b>\$3M</b>	<b>\$2M</b>	<b>\$11M</b>

Attachment 1

AO Proposal Evaluations
KSC ELV Launch Services Evaluation Input

Proposal Name:
Proposal #:
Evaluator POC:
Phone:
Email:

Technical Evaluation:

Overall Assessment - given the ground rules in the AO, is the proposed LV concept feasible for this application?

Yes No Yes with comments - see details below

LV Performance: Area of Concern

Proposed LV configuration:

Proposed Mass-to-Orbit Requirements:

Mass: kg Apogee: km Perigee: km Incl: deg

Does the proposed LV configuration have adequate performance capability? Yes No

If yes, how much performance margin is available? kg %

Comments/Issues/Concerns:

LV-to-SC Interfaces: Area of Concern

Payload Fairing Envelope - adequate envelope for proposed SC? Yes No Unclear

Proposed Mechanical Interface (LV/SC Adapter)?

Standard Interface Custom Adapter Req'd Unclear

Mission Unique Modifications Required?

Yes No Unclear

Comments/Issues/Concerns:

LV Cost Assessment: Area of Concern

Is LV cost profile consistent to that given in the AO LV Appendix?

Yes No Unclear

If mission unique mods have been identified, have they been properly accounted for in cost profile?

Yes No Unclear

# Attachment 1

## AO Proposal Evaluations KSC ELV Launch Services Evaluation Input

Comments/Issues/Concerns:

Area of Concern

Comments/Issues/Concerns – general in nature and/or with other sections of the proposal: